CHRONIC SUPPURATIVE PAROTITIS WITH ACUTE EXACERBATIONS*

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The parotid gland is subject to two separate inflammatory reactions: the epidemic parotitis or mumps, and the secondary or sometimes called symptomatic parotitis. Mumps appear as a peculiar, primary, infectious disease, usually epidemic, and are rather common. The contagious character, regular incubation period and typical course suggest that the disease is due to a specific organism, but this has not been definitely determined. Suppuration scarcely ever occurs in genuine mumps. The secondary form, acute suppurative parotitis, is a rare condition, as one finds upon referring to the literature on the subject. The case I wish to report is of special interest because of the repeated acute attacks imposed on a chronic suppurative parotitis.

HISTORY

The history is as follows: Mrs. W., age 61, American, was always delicate as a child, and had measles, malaria, chicken-pox, frequent peritonsillar abscesses and typhoid fever. At the age of twelve she had mumps of the right parotid gland with an uneventful recovery. During adolescence and early womanhood she enjoyed fairly good health, but was never robust. Since then she was operated for a strangulated ovarian cyst and had the left breast removed for a suspected carcinoma. At the age of forty the right parotid gland became acutely inflamed. No operation or serious illness preceded this attack, and for a time it was considered as another attack of mumps. However, after the acute symptoms subsided the gland failed to return to normal. Each day it was distended with a thick yellowish-white material, which would not evacuate spontaneously but had to be expressed from the gland through the duct. This condition has remained and has behaved analogous to a chronic suppurative dacryocystitis, with recurring acute attacks. In the past twenty years she has had fifteen acute attacks varying in severity and duration. Unfortunately this affection is only one of many other disorders, and her chief complaint is a severe bronchial asthma which began fourteen years ago. Since the onset she has sought relief in many parts of the country, but it is one of those severe forms of asthma in which practically everything has been tried with disappointing results. Lack of time prevents me from considering the asthmatic condition except from the standpoint of the possible relationship to the parotid gland and vice versa. The chronic suppurative condition of the gland is determined by an examination of the material which is expressed daily. The smears show numerous pus cells, and cultures usually show staphylococci, although at intervals streptococci viridans have been isolated. I have personally observed the last two acute attacks.

The first of these occurred in May, 1921, and according to the reports of the patient's daughter, who is her constant companion, the attack followed the usual course of the preceding severe ones. I was called because the patient could not empty the gland. There was a swelling the size of a walnut, but no external signs of inflammation; no redness or tenderness. As had been done in the previous attacks, I probed the duct, found it patent, and injected normal salt solution. Heat was applied externally. These measures were continued daily, but no drainage was obtained. The gland increased in size and by the third day became tense, tender and painful. The temperature rose to 102 and the white count to 15,000. Large doses of bromides and codeine became necessary. An X-ray was taken, but no calculi were seen. The fifth day drainage began spontaneously and foul-smelling pus exuded from the duct in which streptococci viridans were isolated. By the twelfth day the gland resumed its chronic condition.

The past two years the patient has been confined to bed because of the severe asthma, an alarming attack occurring every two or three months. The first week in April of this year she had a violent gastric upset with nausea and vomiting, and it was necessary to give merely glucose per rectum for two days. Milk was resumed when the attack subsided.

A few days later, April 15, the gland again failed to empty. The course differed this time in that the gland failed to drain the fifth day. Expression of the gland and duct, probing and injection of one to two ccs. of normal salt solution were again attempted. On the sixth day the skin over the gland became red and in spots almost purplish, and an edema of the cheeks and eyes occurred. The temperature rose to 101 and remained about that until the seventh day, when there was a decided chill, followed by a temperature of 104 and a white count of 20,000. Any operative interference had been delayed because of the fear of a permanent fistula, and the fact that in the fifteen other attacks the pus eventually drained through the duct, but this time the general condition demanded interference. An ounce of foul yellowish pus was aspirated from a point of fluctuation 2 cm. from the angle of the jaw, and a drain introduced. A blood culture taken at this time was negative. Dr. Andrews, who had seen the patient during an acute attack five years ago, suggested intramuscular injections of 5 cc. sterile milk every third day for its alexin action. Good drainage was maintained, the inflammation gradually subsided, and in two weeks the wound closed spontaneously. The gland has again resumed its chronic condition. The observation of the two acute attacks and a study of the cases reported in the literature lead to several conclusions. A brief review of the essential points of the anatomy and physiology of the gland is necessary.

ANATOMY AND PHYSIOLOGY

You recall that a simple gland is one which remains undivided; and that a compound gland, on the other hand, is one that breaks up into two or more branches, and may be tubular, alveolar or of a mixed tubular and alveolar form. The parotid gland is a typical compound acinous gland; that is, it is composed of a main duct which branches and re-branches freely. The terminal divisions of the ducts end finally in specialized secreting parts known as the acini. The gross structure of the gland consists of a number of masses, often as large as peas, which are surrounded and held together by connective tissue. These are known as lobes, which in turn are made up of a number of smaller masses known as the lobules. The parotid fascia, which is a continuation of the deep cervical fascia, forms a firm capsule for the gland. The main duct (Stenson's) opens into the vestibule of the mouth by a very small orifice opposite the crown of the second upper molar tooth. Its turn around the anterior border of the masseter muscle must be borne in mind in passing the probe into the duct from the mouth. The salivary glands secrete under nerve stimulation. The parotid nerves are derived from

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the auriculo-temporal and from the sympathetic. An inhibition of secretion is therefore an inhibition primarily through the nervous system.

ETIOLOGY

Acute suppurative parotitis, as stated before, is a secondary condition and may occur in the course of an infectious disease, but most of the cases reported are those occurring as a post-operative complication. There is a diversity of opinion as to the etiology. Paget in 1886 proposed the term sympathetic parotitis. He observed that the cases usually followed operations on the ovaries or other genital organs.

Hauan and Pilliet first suggested in 1889 that parotitis could occur as a secondary infection of Stenson's duct by mouth organisms, called an ascending infection. They demonstrated that the inflammatory processes begin in the center of each lobule and spread later to its periphery. A number of men accept this theory. Frank reports cases following appendicitis, one fatal, and concluded that its origin is due to an ascending infection of Stenson's duct. Collins reports eight cases, post-operative, with four fatalities, and concludes that its development is favored by a dry condition of the mouth and a lack of fluids in the body, and that it is an ascending infection. Clause and Duplay concluded from clinical observations and experiments on animals that infection of the parotid occurs in abnormally predisposing conditions; that micro-organisms introduced must be excessive in number and very virulent; that the general vitality of the animal must be lowered and that the normal secretion of the parotid altered in quantity and in quality.

Fisher reports twenty cases, and after a careful study of the subject concludes that septic parotitis is hematogenous in origin; that secretion of the gland is under the influence of nerve stimuli; and that the incidence of post-operative parotid involvement is neurologically dependent upon surgical shock or inhibition of the secretory and trophic fibers from higher psychic centers. Deaver classifies post-operative parotitis into three groups: metastatic, occurring only in pyaemic condition; escending parotitis due to ascending infection via the duct; and traumatic, the result of direct pressure on the parotid gland. Blair believes neither theory, hematogenous or ascending, is above dispute. The behavior of one of his cases has suggested to him the probability of stone irritation or obstruction.

There are two essential factors in the production of an acute attack of parotitis. There is a predisposing cause and an existing cause. The latter, of course, is the infection, which may be hematogenous, ascending through the duct or in the gland as a chronic infection. The predisposing cause is apparently more important, and this is the inactivity of the gland. The inactivity due either to inhibition of secretion by shock or lack of stimulation from oral starvation. This inactivity is illustrated in the report of Rolleston and Oliver following the medical treatment of 1000 cases of gastric ulcer; they found that secondary parotitis occurred ten and a half times more frequently in cases treated by oral starvation than in those allowed food by mouth. Preceding the present acute attack, as mentioned above, the patient has a gastric upset in which it was necessary to institute oral starvation for two days. The inactivity of the gland apparently produces a stasis which increases the susceptibility of the gland.

The treatment of this affection may be considered under prophylactic and active. The former consists in maintaining an active secretion of the gland. Fenwick, in an article entitled "The prevention of Parotitis During Rectal Feeding," states that he had the patients suck an India rubber teat about two inches long, which produced the desired effect. Collins states that a good way to excite the secretions of the mouth and keep the current of saliva is to allow the patient to suck on a stick of lemon candy after operation. In the active treatment of an acute attack one must consider the general condition of the patient and the severity of the local condition. Morestin, in 1907, advocated expression of the duct; he reported a post-operative case which became fluctuant and was relieved by this means. Picque pointed out that when suppuration occurs it results rapidly and habitually within thirty-six hours of the infection. He states that nothing from a clinical standpoint allows any differentiation, at least in the beginning, between the gangrenous and other types. The gangrenous types always appeared fatal to Picque. He never allows a parotitis to evolve spontaneously. Wagner, in 1904, stated that post-operative parotitis ends in death in 30 per cent of the cases. Lequen in 1907 emphasized the fact that when the treatment is by incision the surgeon must not count upon finding fluctuation. Owing to the very close texture of the parotid, the pus infiltration into the glandular tissues, creates multiple pockets, and, exceptionally, collects. He concludes that a single incision sometimes is sufficient, but often multiple incisions are necessary. Gary, in 1911, stated that suppuration is not always easy to recognize; and he has noted a rupture through the skin, auditory canal, sheath of sterno-mastoid, mediastinum, and a retropharyngeal abscess formed. In their reports Frank, Blair, Collins, Deaver and Fisher advise early incision and drainage. You recall that the essential pathology of an acute inflammation is a swelling of the epithelial cells of the acini. This hypertrophy causes a blocking of the many collecting tubules, a retention of saliva results, and with the continued inflammatory reaction the gland becomes swollen. The parotid fascia forms a firm capsule about the gland, and pain results from the marked tension. It is essentially a pressure pain. Suppuration increases the severity of the condition, but because of the firmness of the parotid sheath its degree cannot be determined. The treatment, therefore, must aim to reduce the inflammation, relieve the pain and promote drainage. The probing of the duct is a good means of determining the presence of a stone, but when it is found patent no further use is necessary. I have been convinced that the attempted irrigations of the gland through the duct with the hope of "soften-

ing the material" is unsatisfactory. Immediately following the injection the pressure pain increases in severity. As long as the epithelial cells are swollen and compress the collecting tubules leading to the duct, the many branches cannot be reached by probing or irrigation. What benefit may be derived by this means is greatly offset by the increased pain, edema of the surrounding structures, and the fact that drainage is not established or the course of the acute attack shortened. Heat locally and at times alternating with cold compresses are the best means of reducing the inflammation and pain.

Reports show that the condition must be considered seriously; the mortality has been given as high as 30 per cent. The consensus of opinion is that if the inflammation is increasing, or is no better by the fourth day, the gland should be incised and drained.

CONCLUSIONS

That chronic suppurative parotitis with acute exacerbations is a rare condition.

That an acute attack is predisposed by inactivity of the gland.

That susceptibility of the gland is favored by stasis.

That the exciting cause is an infection present in the chronic condition of the gland.

That the prophylactic treatment is the maintenance of an active secretion.

That the active treatment is local application of heat alternating with cold.

That the condition must be regarded with concern and drainage established by free incision whenever the general symptoms warrant.

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Syphilis of the Lung—The results of a study of all the patients admitted to the Cincinnati Tuberculosis Sanatorium (a municipal institution) for two years are given by Alfred Friedlander and R. J. Erickson, Cincinnati (Journal A. M. A., July 22, 1922). About 65 per cent of the cases belong to the far-advanced group. During 1920-1921, 791 adult patients were admitted to the sanatorium. Thirteen per cent of all patients living had positive blood Wassermann tests; 17 per cent of all patients dying had had positive Wassermann tests. In this series of 791 cases, the diagnosis of pulmonary syphilis was made in four (0.5 per cent). All four cases occurred in white patients, three men and one woman. The diagnosis of pulmonary syphilis was not made in any of the 182 colored patients. The woman with pulmonary syphilis died; she had a combination of pulmonary tuberculosis and syphilis. The three men recovered, two under intensive antisyphilitic treatment, the third without such treatment. In addition to these four cases, two other cases of pulmonary syphilis from the wards of the Cincinnati General Hospital are reported.

Utah State Medical Association—The twenty-eighth annual session of the Utah Medical Association will be held in Salt Lake City August 31, September 1 and 2. Among the interested features of this meeting will be the course in clinical diagnosis to be conducted by Harlow Brooks of New York City. The clinics will be held daily in the County Hospital in Salt Lake City. The program of the State meeting contains many interesting papers by the physicians and members of the Utah State Society and distinguished guests. A. C. Behle is president of the society and William L. Rich secretary.

WHY MEDICAL SOCIAL SERVICE DESERVES A PLACE IN HOSPITAL ORGANIZATION, AND THE DUTIES OF MEDICAL SOCIAL WORKERS TOWARD HOSPITAL ADMINISTRATION

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In approaching the question as to why medical social service should occupy a place in hospital organization, let us review briefly the four duties of a hospital. They are:

1. The care of the sick.
2. The advance of medical science.
3. Making the hospital a center for activities concerning preventive medicine and community health.
4. The training of hospital personnel.

The care of the sick has been considered a duty belonging solely to the hospital. The medical responsibility rests with the physician. But the hospital and the physician have both found that medical social service is of great aid in obtaining the co-operation of the patient, in carrying out medical orders more effectively, and as a result of these and other helps actually hastening convalescence. In short, this means that the medical social worker is materially aiding in the care of the sick. In 1898 Sir Wm. Osler said as he looked over the patients collected in a medical dispensary: "If three out of ten of these get what they really need we are doing well. We are not equipped to treat the other seven." This statement still holds true. Why? Because the other seven need more than medicine and surgery. They need personal contact and help of various kinds, such as medical social workers are trained to give. This help is primarily therapeutic and of a kind hitherto much neglected. And what does this mean to the patient? Let an illustration answer. A patient is admitted to the hospital with a decompensated heart. He has but a limited fund of money for the care of his family while he is out of work. He does not do well in the hospital, because he soon finds that he will require a longer period of rest than the fund for the maintenance of his family will permit. He worries, he becomes restive, and in spite of the fact that the hospital and physicians are giving good service and treatment, the patient is not doing well. How many times has such a patient left the hospital and returned to work? But he is soon back. The hospital might have avoided repeated readmissions and would have been financially ahead if the patient in the first instance had remained under treatment a proper time.

In a similar instance which I have in mind the medical social worker was the first to report to the physician that a certain patient, on account of worry concerning the welfare of his family, was contemplating leaving the hospital much too soon. Through her service the family was temporarily provided for, the patient's mind was placed at ease, and his acute nephritis cleared up splendidly. Can anyone gainsay that the service of the medical social worker in effecting mental rest and co-operation on the part of the